REMARKS

With respect to the "112" rejections, Applicant has amended claims 1 and 8, to more clearly define the invention as a process. Furthermore, product-by-process claims 10-12 have been cancelled herein. Reconsideration is requested.

Claims 1 and 12 were rejected under 102(b) or 103(a) on Geyer. The Examiner has alleged "that Geyer teaches crosslinked copolymers of N-vinyl pyrrolidone in the form of an interpenetrating network (IPN) which is considered a two-phase system inherently".

Applicant respectfully traverses the rejection of amended claim 1 on Geyer.

As amended, the process of claim 1 first provides the two-phase aqueous polymeric composition of U.S. Pat. 6,548,597. This composition is then subjected to a post-treatment with a predetermined amount of an additional crosslinker or proteinaceous material to form a water-resistant polymeric coating composition or a strongly-swellable polymeric gel.

This invention process differs from Geyer which discloses only a continuous network of polymer molecules of crosslinked hydrophilic and hydrophobic polymer components (IPN) which penetrate each other and cannot be separated. This crosslinked copolymer is only a one-phase system with no water soluble polymer component present therein. Stated another way, the Geyer IPN is made directly by a one-step copolymerization of monomers in the presence of crosslinker and initiator. In contrast, in this invention, a novel 2-phase polymer composition of water soluble and water-insoluble polymers is made in aqueous medium by homo- or co- polymerization of a water soluble monomer with crosslinker and initiator. These phases can be readily separated from each other. Then, in the post-treatment step, an additional crosslinker or proteinaceous compound is added (without initiator) to the 2-phase composition to form the desired water-resistant polymeric coating composition or a strongly-swellable polymeric gel.

Neither the starting 2-phase system, or the post-treatment process step are described or suggested in the reference. Accordingly, reconsideration of the rejection of amended claim 1 on Geyer is respectfully solicited.

Claim 1 also was rejected under '102 or '103 on Munro, which was seen to also disclose a crosslinked IPN copolymer. However, as discussed above, the IPN of the reference is made directly by copolymerization of monomers with crosslinker and initiator. In contrast, in this invention, the post-treatment process acts upon a novel aqueous polymer system which is a 2-phase system of water soluble polymer and water-insoluble polymer, and such post-treatment is carried out with an added crosslinker, without initiator. The reaction between the added crosslinker and the 2-phase polymer composition then produces the desired water-resistant polymeric coating composition or strongly swellable polymeric gel of the invention.

Accordingly, reconsideration of the rejection of amended claim 1 on Munro is requested.

Claim 1 also was rejected over Ogawa '641 and/or '705. Both references, however, merely provide an element for electrophoresis including a polyacrylamide gel membrane formed by direct polymerization of an acrylamide compound and a crosslinking agent and urea, in the presence of water and initiator. The resultant gel medium could be coated onto a sheet. However, neither reference teaches the starting 2-phase polymer composition which is acted upon by the post-treatment step described and claimed herein.

Reconsideration is requested of the rejection of amended claim 1 on the Ogawa references.

Claim 1 also was rejected on Yanase which showed a hydrogel polymer obtained by polymerizing a monomer component including acrylic acid (salt) post-neutralized to an allowable neutralization ratio. This post-neutralized hydrogel polymer was crosslinked with an agent reactive to the functional group of the polymer. The result was a water-absorbent material suitable for use as sanitary article, e.g. a paper diaper.

In contrast, in this invention, a patented 2-phase polymer system (not a hydrogel) is acted upon in a novel post-treatment step with an additional crosslinker or proteinaceous material to form the desired water-resistant coating composition or polymeric gel. Thus, the materials acted upon as well as the post-treatment process steps and the products obtained, differ in kind from those of the Yanase reference. Reconsideration is respectfully solicited.

Claims 1, 3, 4 and 6-9 were rejected as obvious over Yanase in view of Fan or Ogawa '641. The Examiner has alleged that sequential addition of initiators to improve the reaction is taught by Fan or Ogawa, and Yanase teaches the use of any known polymerization method.

Applicant respectfully traverses the Examiner's rejection of these claims on the combination of these references.

More particularly, in the invention process, an initiator is present only during the polymerization of a water-soluble monomer vinyl monomer, to form the 2-phase polymeric composition. No initiator is present during post-treatment of this composition with an additional crosslinker. Accordingly, there is no sequential addition of initiators in the invention process as alleged in the cited references.

Reconsideration is respectfully requested.

In view of the foregoing, the claims as amended are believed to define patentable invention over the cited references, alone or in combination. Reconsideration and early allowance of the amended claims is respectfully solicited.

In the event any issue still remains after this amendment, the Examiner is urged to call Applicant's Attorney to resolve the matter.

Respectfully submitted,

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